

May, New Jersey, 26th; Dyberry, Pennsylvania, 26th; Wellsborough, Pennsylvania, 21st, 23d; Variety Mills, Virginia, 26th; Dale Enterprise, Virginia, 24th.

*South Atlantic states.*—Hatteras, North Carolina, 10th, 28th; Stateburg, South Carolina, 16th, 23d, 25th.

*Florida peninsula.*—Key West, 2d; Archer, 9th.

*West Gulf states.*—Fort Smith, Arkansas, 24th, 30th; Little Rock, Arkansas, 24th; Lead Hill, Arkansas, 1st, 22d, 25th, 28th; Point Pleasant, Louisiana, 24th.

*Tennessee.*—Nashville, 20th, 25th, 28th, 31st.

*Ohio valley.*—Pittsburg, Pennsylvania, 17th; Frankfort, Kentucky, 14th.

*Lower lake region.*—Erie, Pennsylvania, 15th; Buffalo, New York, 7th, 11th, 15th, 16th, 26th, 29th; Cleveland, Ohio, 26th; Oswego, New York, 26th; North Volney, New York, 26th; Palermo, New York, 29th; Wauseon, Ohio, 14th, 15th, 17th, 26th.

*Upper lake region.*—Escanaba, Michigan, 10th, 17th, 28th; Grand Haven, 9th, 10th, 26th; Milwaukee, Wisconsin, 11th; Riley, Illinois, 11th, 14th, 17th, 27th, 29th; Thornville, Michigan, 7th.

*Upper Mississippi valley.*—La Crosse, Wisconsin, 14th; Keokuk, Iowa, 13th, 25th; Davenport, Iowa, 6th, 11th, 27th, 29th.

*Middle slope.*—Fort Elliott, Texas, 23d; Independence, Kansas, 24th; Yates Centre, Kansas, 20th, 24th, 25th, 29th; Maud, Kansas, 24th.

*Middle plateau.*—Salt Lake City, Utah, 27th; Nephi, Utah, 15th, 27th.

*Northern plateau.*—Dayton, Washington Territory, 19th; Boise City, Idaho, 6th, 27th.

*Middle Pacific coast region.*—San Francisco, California, 5th, 18th, 24th, 27th, 28th, 31st; Cape Mendocino, California, 29th; Oakland, California, 28th.

#### LUNAR HALOS.

During October lunar halos were observed in the several districts as follows:

*New England.*—1st to 4th, 8th, 26th, 29th.

*Middle Atlantic states.*—1st, 4th, 5th, 6th, 24th, 25th, 26th, 31st.

*South Atlantic states.*—1st to 7th, 24th, 26th, 28th to 31st.

*Florida peninsula.*—Key West, 5th, 29th.

*Eastern Gulf states.*—1st, 4th, 6th, 23d, 25th, 26th, 29th, 30th.

*Western Gulf states.*—1st to 4th, 6th, 24th, 28th.

*Rio Grande valley.*—Brownsville, Texas, 24th.

*Ohio valley.*—1st, 2d, 25th, 27th to 30th.

*Lower lake region.*—Cleveland, Ohio, 2d; Buffalo New York, 6th; Palermo, New York, 28th.

*Upper lake region.*—1st, 3d to 6th, 27th to 31st.

*Extreme northwest.*—Fort Buford, Dakota, 4th; Saint Vincent, Minnesota, 24th.

*Upper Mississippi valley.*—1st, 3d, 5th, 26th, 28th to 31st.

*Missouri valley.*—5th, 29th, 31st.

*Northern slope.*—27th, 29th, 30th.

*Middle slope.*—1st, 2d, 24th, 29th, 30th.

*Southern slope.*—Fort Stockton, Texas, 4th.

*Southern plateau.*—Fort Apache, Arizona, 11th.

*Middle plateau.*—Salt Lake City, Utah, 27th, 29th; Nephi, Utah, 27th.

*Northern plateau.*—Boise City, Idaho, 1st, 5th, 6th, 30th.

*North Pacific coast region.*—6th, 7th, 10th, 27th, 28th, 29th.

*Middle Pacific coast region.*—12th, 26th to 29th, 31st.

The phases of the moon during the month were: full moon, 4th, 4.54 p. m.; last quarter, 11th, 9.23 a. m.; new moon, 18th, 7.25 p. m.; first quarter, 26th, 11.48 a. m.; perigee, 7th, 9 a. m.; apogee, 23d, 8 a. m.

#### MIRAGE.

San Francisco, California, a mirage was observed off the Berkeley shore during the afternoon of the 8th.

New London, Connecticut, a mirage was visible from 6.55 to 8.25 a. m. on the 15th.

Salina, Kansas, 23d.

Galveston, Texas, a mirage was observed at 12.49 p. m. on the 10th.

Indianola, Texas, 9th, 27th.

Marquette, Nebraska, 14th, 17th.

#### MISCELLANEOUS PHENOMENA.

##### SUNSETS.

The characteristics of the sky, as indicative of fair or foul weather for the succeeding twenty-four hours, have been observed at all Signal Service stations. Reports from one hundred and fifty-eight stations show 4,887 observations to have been made, of which four were reported doubtful; of the remainder, 4,883, there were 4,232, or 86.7 per cent., followed by the expected weather.

##### SUN GLOWS.

The sun glows, reports of which have been published in previous REVIEWS, were as extensively observed during October as in the preceding months, the displays having the same characteristics as those heretofore described. The dates on which this phenomenon has been noted in the several states and territories by the regular and voluntary observers of the Signal Service are published below. Where the phenomenon was observed at sunrise it is so stated, and where the dates only are given they refer to the displays at sunset.

*Arizona.*—Fort Bowie, 26th.

*Arkansas.*—Lead Hill, 1st, 2d, 4th, 6th, 7th, 9th, 10th, 14th, 15th, 17th, 18th, 22d, 31st.

*California.*—College City, 21st to 25th; San Francisco, 5th, both at sunrise and sunset, and on 10th at sunset; Red Bluff, 17th to 22d; Los Angeles, 2d to 8th, 13th to 17th, 20th to 24th, 26th, 27th, 28th, 31st.

*Dakota.*—Vermilion, 13th, 14th, 15th, 18th, resembling the bright displays of last fall; Yankton, 2d, 14th, 15th; Deadwood, 30th.

*Florida.*—Archer, 4th to 7th, 14th, 15th, 16th, 18th, 24th, 31st; Manatee, 5th to 8th; Key West, 15th; Pensacola, 4th to 7th.

*Georgia.*—Forsyth, 5th; Augusta, 13th, 14th, 17th, 18th, 23d, 30th, 31st; Atlanta, 1st, 5th, 6th, 9th, 11th, 12th, 17th.

*Idaho.*—Boisé City, 15th, 20th.

*Indiana.*—Vevay, at sunset, 3d, 4th, 5th, 9th, 12th, 14th, 15th, 19th, 23d, 28th, and at sunrise, 6th, 10th, 20th, 21st; Wabash, observed on all clear days during the month.

*Iowa.*—Cedar Rapids, observed on numerous evenings during the month and in two instances the light covered the sky; Muscatine, at sunrise, 5th, 6th, 9th, 10th, 11th, 13th, 20th and at sunset, 2d, 4th, 5th, 8th, 9th, 12th, 13th, 16th, 17th, 18th, 23d; Humboldt, at sunrise, 15th, 19th, and at sunset 3d, 14th, 16th; Manchester, 2d, 5th, 8th, 11th, 12th, 15th, 16th, 17th, 18th; Ottumwa, 10th, 14th, 15th, 16th, 18th; Davenport, 17th, 31st.

*Kansas.*—Wellington, 1st to 6th, 8th to 12th, 14th to 19th, 21st to 24th, 26th, 27th, 29th, 30th, 31st; Wyandotte, 17th, 19th.

*Louisiana.*—Grand Coteau, 17th.

*Maine.*—Eastport, 1st, 2d, 5th, 20th.

*Maryland.*—Fallston, 4th, 6th; Baltimore, 5th, 9th.

*Massachusetts.*—Somerset, 6th, 10th, 19th; Taunton, 18th; Thatcher's Island, 5th, 6th, 20th.

*Michigan.*—Mottville, on numerous evenings during the month; Detroit, 8th, 9th, 12th, 17th, 19th, 20th, 24th; Escanaba, 8th, 9th, 13th, 16th; Port Huron, 2d, 5th, 17th, 19th, 23d.

*Minnesota.*—Chester, 9th, 16th, 17th, 18th; Saint Paul, 5th, 18th.

*Montana.*—Fort Shaw, 16th; the sky presenting a fiery appearance of unusual brilliancy, the display lasting for one hour after sunset; Fort Maginnis, 17th, 22d; Fort Assinaboine, 3d, 16th, 22d, 23d, 26th.

*Nebraska.*—Red Willow, 8th, 22d, 23d.

**Nevada.**—Carson City, 7th, 10th, 11th, 15th, 20th to 23d; 25th, 28th to 31st.

**New Hampshire.**—Mount Washington, 20th.

**New Mexico.**—Fort Craig, 10th, 12th, 16th, 19th, 20th, 22d, 25th, 27th, 28th.

**New York.**—North Volney, 20th; Palermo, 10th, 19th; Factoryville, 10th; Mountainville, 5th; Auburn, 20th; New York City, 9th, 10th, 25th; Rochester, 9th.

**North Carolina.**—Flat Rock, 1st, 18th, 15th.

**Ohio.**—College Hill, 13th, 14th, 31st; North Lewisburg, 8th, 9th, 10th; Portsmouth, 2d; Wauseon, 4th; New Athens, on nearly all clear days of the month; Toledo, at sunset, 4th, 6th, 9th to 15th, 17th, 23d, and at sunrise, 9th, 11th, 13th, 20th; Sandusky, 9th; Cleveland, 2d.

**Oregon.**—Albany, 16th, 19th; Portland, 15th, 16th, 19th.

**Pennsylvania.**—Fallsington, 5th, 6th, 13th, 14th, 15th, 18th, 19th, 20th; Wellsborough, 6th to 13th; Philadelphia, 26th.

**Rhode Island.**—Nayatt Point, at sunset from 1st to 15th, 17th, 19th, 20th, 22d, 24th, 26th, and at sunrise, 1st to 15th, 19th, 20th, 22d, 23d, 24th, 26th; Point Judith, 1st, 5th, 7th, 9th, 10th, 11th, 15th, 18th, 19th, 20th, 26th.

**South Carolina.**—Charleston, 4th, 6th, 7th, 15th, 16th, 17th.

**Tennessee.**—Ashwood, 4th; Nashville, 2d, 4th to 8th, 10th to 15th, 17th, 18th, 19th, 21st to 31st; Chattanooga, 1st, 2d, 6th, 8th, 14th, 18th; Memphis, 17th.

**Texas.**—Cleburne, at sunrise, 6th, 14th, 17th, and at sunset, 7th, 31st; Rio Grande City, 1st, 3d, 10th, 19th.

**Utah.**—Fort Thornburg, 24th, 25th, 27th, 28th; Salt Lake City, 17th.

**Vermont.**—Strafford, 20th.

**Virginia.**—Johnsontown, 9th to 15th, 19th; Wytheville, at sunrise and sunset on nearly every day during the month, the sunset displays being the more brilliant; Fort Myer, at sunrise, 5th, 22d, and at sunset, 4th, 5th, 6th, 9th, 10th, 14th, 15th, 20th, 21st, 23d; Norfolk, 1st, 15th; Lynchburg, 4th, 11th, 13th, 14th, 15th, 17th to 19th, 23d.

**Wisconsin.**—Sussex, at sunrise, 13th; La Crosse, 2d, 5th, 8th, 9th, 12th, 17th.

The Signal Service observer at Barneget City, New Jersey, reports as follows concerning a phenomenon observed at that place, at 3.08 p. m. on the 26th:

On either side of the sun, and about 5° distant, were two small spots presenting the colors of the rainbow. The spots were on a horizontal plane with the sun, while in the zenith was a well defined arc, similar to the rainbow, with the convex side towards the sun. As the cirrus cloud was rapidly merging into stratus, the appearance faded away, and at the expiration of twenty minutes, it had entirely disappeared.

SUN SPOTS.

Professor David P. Todd, director of the Lawrence Observatory, Amherst, Massachusetts, furnishes the following record of sun spots for October, 1884:

Date— Oct., 1884.	No. of new		Disappeared by solar rotation.		Reappeared by solar rotation.		Total No. visible.		Remarks.
	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	
5, 5 p. m.							6	20†	
6, 3 p. m.	0	10†	2	3	0	0	4	30†	
7, 4 p. m.	1	10†	0	0	0	0	5	40†	
9, 2 p. m.	1	3			1	3	3	35†	
10, 3 p. m.	0	10†	0	0	0	0	2	40†	
11, 9 a. m.	0	0	0	0	0	0	2	45†	
13, 11 a. m.	0	0	0	20†	0	0	2	25†	
15, 9 a. m.	1	3	0	15†	1	3	2	5	
15, 4 p. m.	0	0	0	0	0	0	2	0	
17, 4 p. m.	1	8†	1	3	0	5†	2	12†	
19, 3 p. m.	0	10†			0	0	1	20†	
20, 9 a. m.	2	10†	0	0	0	0	3	30†	
20, 4 p. m.	0	0	0	0	0	0	3	30†	
21, 2 p. m.	1	2	0	0	1	2	4	30†	
22, 10 a. m.	1	3	0	0	1	3	5	35†	
23, 10 a. m.	1	5†	0	0	0	0	6	35†	
24, 2 p. m.	0	15†	0	0	0	0	6	50†	
25, 3 p. m.	0	0	1	5†	0	0	5	50†	
26, 2 p. m.	1	5†	0	0	0	0	6	55†	

Faculae were seen at the time of every observation. †Approximated.

The following extract is taken from "Science" of November 14th, 1884:

The long-delayed maximum of solar spots, now undoubtedly passed, has attracted unusual attention to the spot periodicity. To-day and yesterday the visible hemisphere of the sun was, for the first time in nearly fourteen months, observed to be entirely free from spots; the occasion next preceding this being 1883, September 25th. During the past two years the only additional days on which the sun was observed to be without spots were in 1882, October 9th and December 3d, and in 1883, February 23d, and May 25th, 26th, 27th, and 28th.

DAVID P. TODD.

LAWRENCE OBSERVATORY, AMHERST, MASS., November 8.

Mr. Louis G. Carpenter, of Lansing, Michigan, reports sun spots during October as follows:

Date.	Time, goth meridian.	No. of groups.	No. of sun spots.
October 2.....	4.30 p. m.	5	39
October 3 .....	4.30 p. m.	6	33
October 6 .....		4	18
October 7 .....	4.00 p. m.	5	21
October 9.....	4.00 p. m.	3	12
October 13 .....	2.00 p. m.	2	14
October 14.....		3	7
October 15.....	9.00 a. m.	3	10
October 17 .....	4.00 p. m.	1	7
October 18.....	1.45 p. m.	4	16
October 20.....	3.00 p. m.	5	24
October 25.....		5	20

DROUGHT.

**Alabama.**—The following report is from the "New York Herald" of October 20, 1884:

TUSCALOOSA, October 19, 1884.—The effects of the unprecedented drought in Alabama have become appalling in some sections of the state. From different localities come reports that wells and streams are drying up, and it is with great difficulty that water enough for man and beast can be had. The navigable streams of the state are lower than for years before, and even the lightest draught steamers cannot ascend the Warrior and Tombigbee rivers. Many mills throughout the country have been stopped for want of water, and even forest trees are dying in some places. No rain has fallen here since August 28. Dry, parching winds sweep clouds of suffocating dust into the air, and there is no immediate prospect of relief.

Mobile: the rain on the 22d was the first that had fallen in this vicinity for twenty-eight days, and in many parts of the state no rain had fallen for months previous to the above date.

Montgomery, 23d: the severe drought in this state was partially broken in some sections by the rains of the 22d. In the vicinity of Montgomery no rain of consequence has fallen for about three months. Vegetation is dying out, and streams and wells are becoming low.

Reports from Birmingham state that the rain of the 22d ended the drought in that locality, where no rain of consequence had fallen since August 4.

Florida.—Cedar Keys, 23d: the continued dry weather has caused scarcity of water in this part of the state.

Georgia.—Atlanta: the rain on the 22d was the first sufficient to lay the dust that had fallen for seventy-three days. As a result of the severe drought the cotton crop has been cut short and farming operations delayed.

Maryland.—Fallston, Harford county, 30th: during the month the soil has been too dry for seeding grain; at the close of the month wells were failing and streams were very low.

Massachusetts.—Somerset, Bristol county, 31st: the drought of September and October, 1884, has largely reduced the yield and injured the quality of the late crops. Only 0.94 inch of rain fell during September, and from October 1st to 30th, 0.83 inch fell. Turnips, carrots, beets, etc., were checked in their growth; grass in the pastures dried up, and the streams became low, many of them drying up entirely.

New Hampshire.—Dover, 21st: the woolen mills at South Berwick, Maine, have shut down on account of insufficient water power. The rivers and streams in this region are very low and farmers have to drive their cattle long distances for water.

Concord: on the 23d the Merrimac river at this place reached the lowest point attained for several years.

North Carolina.—Scott's Hill, Pender county, 3d: the weather continues very dry and crops and pastures are suffering in consequence.

Kitty Hawk, 27th: the drought which has prevailed in this vicinity during the past two months still continues.

Raleigh, 30th: the weather during the month was very hot and dry; the total rainfall was only 0.50 inch, and the temperature rose to 90° and above, daily, from the 1st to 17th.

Tennessee.—Nashville, 16th: the protracted drought continues, and though equally as prolonged as that of 1881, it has not proved as damaging in its effects, as it came about one month later. In the upper country, along the Cumberland plateau, the water courses and pastures have dried up. On the 18th, the wells in Nashville were beginning to fail. Reports from Coffee county on the 21st, stated that no rain had fallen in that vicinity since September 26th, and that the total rainfall for that month, prior to the above date, was only 0.80 inch.

Chattanooga: on the 22d 0.28 inch of rain fell, which was the first rain of any consequence that had fallen for six weeks; on the 27th, 28th, and 29th moderate rains fell in sufficient quantity to check the drought.

Ashwood, Maury county, 30th: the drought which was ended by the rains of the last days of the month had prevailed for nearly three months.

Virginia.—Norfolk, 21st: no rain of consequence has fallen in this vicinity since the middle of August, and agricultural interests have suffered seriously. Rain at this time would not save the crops, but would be of great benefit to pastures and in replenishing the water supply.

Petersburg, Dinwiddie county: on the 1st, owing to limited water supply, it became necessary to utilize the water in the upper Appomattox canal in order to supply the city. All of the cotton factories in this city and vicinity were closed on the 5th, in consequence of the limited water power, occasioned by long continued drought. The first rain in this vicinity for more than eight weeks fell during the night of the 22–23d.

Danville: the drought in this vicinity was terminated by the rains of the 22d.

Marion, Smyth county: no rain fell from August 29th to October 22d, during which time severe drought prevailed; on the 22d 0.40 inch of rain fell, and on the 27th and 28th the rainfall amounted to 0.70 inch, which was sufficient to end the drought.

Wytheville, Wythe county: the rainfall for the month was 0.86 inch, which was only sufficient to partially check the drought which has prevailed during this and the preceding month; at the close of the month all streams had become very low, and the cisterns were exhausted.

Variety Mills, Nelson county, 30th: the drought which prevailed in August and September has continued during October. The total rainfall for the three months is 3.03 inches, of which amount 0.96 inch fell in October.

West Virginia.—Helvetia, Randolph county: the weather during September and October has been dry; at the close of the latter month the streams were very low, and mills dependent on water power were idle. The drought appears to have been more severe in the southern portions of the state than in this vicinity.

#### METEORS.

Prescott, Arizona: a brilliant meteor was seen at 7.10 p. m. on the 3d, shooting across the southern sky in a direction from southeast to northwest.

Rio Grande City, Texas: a brilliant meteor was observed at 7.30 p. m. on the 6th; it started from a point near the zenith, fell slowly toward the horizon, and exploded when at an altitude of 10°. During the flight of the meteor it assumed various colors; when first seen it was of bright yellow color which changed to violet, and before exploding, its centre was of bright yellow, surrounded by a band of pale blue. As the meteor moved downward it apparently increased in size; no noise was heard at its explosion. Although the moon was above the horizon and the night clear, the light from the meteor was sufficient to cast well-defined shadows. It left a small cloud, which owing to the light of the moon, was very indistinct.

Indianola, Texas: a very brilliant meteor was seen at 9 p. m. on the 6th, passing across the sky at an altitude of 20° from west-northwest to east; it was visible for nearly four seconds, and although the moon was full, it produced a light which was quite noticeable.

Burlington, Iowa: at 12.05 a. m. on the 14th, a meteor passed from the northern horizon to the zenith, leaving a long and brilliant trail. On the 18th at 12.15 a. m., a meteor was observed passing from the zenith to the northern horizon, leaving a trail 20° in length; another meteor was seen at 4.05 a. m. on the same date, at an altitude 45° in the northwestern sky, moving toward the horizon.

Grand Haven, Michigan: a brilliant meteor was observed at 7.10 p. m. of the 17th; its path was from north to south, passing about 20° east of the zenith. The meteor moved with great velocity, and when reaching a point about 30° above the southern horizon, it exploded with a loud report, and for a moment illuminated the entire sky as if by a flash of lightning. After the explosion, a small cloud was distinctly seen where the meteor disappeared.

Indianapolis, Indiana: at 10.46 p. m. of the 18th, a small, brilliant meteor passed from a point a few degrees west of the zenith, to within 40° of the western horizon.

Chattanooga, Tennessee: a small but brilliant meteor was observed in the northern sky at 7.47 p. m. on the 21st. On the 23d, at 12.12 a. m. a large meteor passed from the zenith to within about 20° of the western horizon, where it exploded into fragments, leaving a diffuse, reddish light which remained visible thirty seconds.

Somerset, Bristol county, Massachusetts: at 7.42 p. m. (eastern standard time), of the 23d, a brilliant meteor passed across the sky from east to west. The nucleus was approximately one-fourth the apparent size of the full moon, of a silvery color, with a trail 30° in length. It moved rapidly, and when about 20° above the western horizon, it exploded into from six to eight pieces, leaving a trail which remained visible nearly one minute. The meteor illuminated the entire sky during its flight. No noise was heard at its explosion.

Nashville: a large meteor was observed at 10.34 p. m. on the 24th; it was visible about four seconds during its passage from the "Milky Way," at an altitude 65° to the west by south horizon. The meteor left a trail of bluish light which remained visible for about six seconds; its path was about 85° in length.

Mr. John J. Cass, voluntary observer, at Allison, Decatur county, Kansas, reports having observed meteors as follows, local time being used: 4th, one at 8 p. m. and one at 11 p. m.; 14th, one at 10 p. m.; 15th, one at 4 a. m. and thirty from 7 to 10 p. m.; 16th, fifty-eight from 7.25 to 10 p. m.; 17th, fifty-six from 6.30 to 9 p. m.; 18th, nineteen from 7.40 to 9.50 p. m.; 19th, forty-five from 6.15 to 9.50 p. m., when the sky became obscured; 20th, day and night stormy; 21st, ten from 8.25 to 8.55 p. m.; 22d, four from 7.30 to 9 p. m.; 23d, one at 7.45 p. m.

Woodstock, Howard county, Maryland: meteors were observed as follows: 7th, four, from 7.42 to 7.44 p. m.; 10th, one at 8.45 p. m. and one at 8.55 p. m.; 11th, one at 8.30 p. m.; 12th, one at 8.45 p. m.; 12th, one at 8.15 p. m. and one at 8.46 p. m.; 14th, five from 6.30 to 8.35 p. m.; 15th, one at 5.30 a. m. and one at 10.10 p. m.; 19th, one at 5.05 a. m., one at 8.30 p. m. and one at 8.45 p. m.

Meteors were also observed at the following places:

Lead Hill, Arkansas, 1st, 4th, 6th, 9th, 12th, 14th to 17th, 19th, 29th, 30th.

Deadwood, Dakota, numerous on the 25th.

Davenport, Iowa, 2d, 13th, 24th.

Liberty Hill, Louisiana, 1st, 20th.

Rowe, Massachusetts, 17th.

Genoa, Nebraska, 23d.

Red Willow, Nebraska, 8th, 12th.

Readington, New Jersey, 23d.

North Volney, New York, 13th.

Brevard, North Carolina, 13th, 15th.

Jacksonburg, Ohio, 16th, 17th.  
 Albany, Oregon, 23d.  
 East Portland, Oregon, 19th.  
 Fallsington, Pennsylvania, 21st.  
 Pittsburg, Pennsylvania, 3d.  
 Stateburg, South Carolina, 12th, 13th, 21st, 22d.  
 Wytheville, Virginia, 7th.  
 Variety Mills, Virginia, 9th.  
 Dale Enterprise, Virginia, 9th, 17th.  
 Sussex, Wisconsin, 16th.

#### PRAIRIE AND FOREST FIRES.

Richardton, Stark county, Dakota: on the 8th, prairie fires began near Knife river; during the two succeeding weeks the fires burned over an area of many square miles, causing great damage. The snow and rain during the last days of the month was sufficient to almost extinguish the fires.

Fort Sully, Dakota: on the 19th the sun was obscured all day by dense smoke from forest fires.

Huron, Dakota: during a high wind on the afternoon of the 19th, an extensive prairie fire swept over the northwestern part of this county, causing the destruction of much stacked grain, and several dwellings and barns. The wind carried the flames over the "fire-breaks" which were more than one hundred feet in width.

Fort Assinaboine, Montana: on the 13th dangerous prairie fires prevailed in this vicinity and threatened the destruction of several thousand cords of wood near the post. In some instances persons narrowly escaped with their lives and had their clothing and hair burned. Prairie fires also occurred on the 11th, 12th, 18th, 21st.

Crisfield, Somerset county, Maryland, 23d: during the past week destructive forest fires have prevailed in this county, and in Accomack and Northampton counties, Virginia.

Petersburg, Dinwiddie county, Virginia, 24th: reports from Brunswick and Greenville counties on the 24th, stated that destructive forest fires had broken out, and that much valuable timber and large quantities of undergrowth were destroyed.

Reports from Norfolk on the 5th stated that fires had broken out in the Dismal Swamp, a short distance from Norfolk, and threatened to destroy much valuable timber and cord-wood.

Marion, Smyth county, Virginia, 19th: owing to the continued fires in the mountains, the atmosphere is filled with dense smoke.

Johnsontown, Northampton county, Virginia, 31st: forest fires have been burning in this county since September 18th, and continue at the close of October.

Prairie and forest fires were also reported from the following places:

Fort Meade, Dakota, 14th, 15th.  
 Fort Yates, Dakota, 9th, 13th, 25th.  
 Fort Buford, Dakota, 11th to 19th.  
 Fort Totten, Dakota, 9th, 13th, 18th, 20th.  
 Poplar River, Montana, 12th, 14th.  
 Cantonment, Indian Territory, 13th.  
 Fort Reno, Indian Territory, 1st, 2d, 4th, 5th, 28th.  
 Humboldt, Iowa, 28th.  
 Pike's Peak, Colorado, east of station, 23d.  
 Saint Vincent, Minnesota, 6th, 7th, 10th to 16th, 18th, 19th, 23d, 24th, 25th,  
 Red Willow, Nebraska, 23d.  
 North Platte, Nebraska, 17th.  
 Vineland, New Jersey, 8th to 22d.  
 Cape Henry, Virginia, 8th, 13th, 16th, 17th, 19th, 26th, 28th.

#### MIGRATION OF BIRDS.

*Geese flying southward.*—Lead Hill, Arkansas, 23d, 25th; Little Rock, Arkansas, 27th; Red Bluff, California, 6th; Cape Mendocino, California, 9th; Vermilion, Dakota, 14th; Forts Bennett and Sully, Dakota, 24th; Cairo, Illinois, 6th; Edgington, Illinois, 13th, 25th; Logansport, Indiana, 7th; Cantonment, Indian Territory, 5th, 23d; Manchester, Iowa, 5th; Des Moines, Iowa, 20th; Fort Madison, Iowa, 26th; Maud, Kansas,

8th; Manhattan, Kansas, 17th; Independence, Kansas, 21st; Yates Centre, Kansas, 13th, 14th; Wellington, Kansas, 16th, 17th, 27th; Elk Falls, Kansas, 26th; Liberty Hill, Louisiana, 23d, 24th, 25th; Emmitsburg, Maryland, 13th; Ocean City, Maryland, 4th, 5th; Mottville, Michigan, 21st, 25th, 26th; Grand Haven, Michigan, 22d; Marquette, Michigan, 19th; Duluth, Minnesota, 15th, 17th, 21st; Moorhead, Minnesota, 16th; Saint Louis, Missouri, 22d, 25th; De Soto, Nebraska, 6th; Genoa, Nebraska, 16th; Puerto de Luna, New Mexico, 7th; Little Egg Harbor, New Jersey, 8th; Palermo, New York, 23d; Oswego, New York, 3d; Factoryville, New York, 15th; Albany, New York, 31st; Ithaca, New York, 4th; North Volney, New York, 1st, 20th; New River Inlet, North Carolina, 16th; Kitty Hawk, North Carolina, 16th; Grampian Hills, Pennsylvania, 13th; Wellsboro, Pennsylvania, 19th, 22d, 23d, 29th; Portland, Oregon, 5th, 11th, 26th; Roseburg, Oregon, 5th, 9th; Astoria, Oregon, 9th, 11th, 12th, 13th; Point Judith, Rhode Island, 6th; Charleston, South Carolina, 26th; Chattanooga, Tennessee, 15th; Memphis, Tennessee, 21st, 23d; Fort Elliott, Texas, 6th; Fort Myer, Virginia, 13th; Cape Henry, Virginia, 1st, 6th, 14th, 19th; Embarras, Wisconsin, 13th; Sussex, Wisconsin, 25th.

*Ducks flying southward.*—Fort Smith, Arkansas, 19th; Little Rock, Arkansas, 27th; Sacramento, California, 30th; Fort Sully, Dakota, 24th; Manchester, Iowa, 7th; Yates Centre, Kansas, 23d, 24th, 28th, 29th; Allison, Kansas, 5th, 8th, 30th; Liberty Hill, Louisiana, 2d, 3d, 24th, 26th; Escanaba, Michigan, 13th; Ithaca, New York, 4th; Oswego, New York, 11th; Hatteras, North Carolina, 8th, 24th; Kitty Hawk, North Carolina, 3d; Wellsboro, Pennsylvania, 19th, 22d, 23d, 29th; Indianola, Texas, 8th, 11th, 22d, 23d, 25th; Rio Grande City, Texas, 13th; Fort Myer, Virginia, 22d.

*Cranes flying southward.*—Fort Sully, Dakota, 12th; Edgington, Illinois, 27th; Yates Centre, Kansas, 21st, 26th; Allison, Kansas, 5th, 7th, 11th, 25th; West Leavenworth, Kansas, 22d; Maud, Kansas, 6th; Genoa, Nebraska, 17th; Portland, Oregon, 21st.

*Pigeons flying southward.*—Fort Smith, Arkansas, 4th; Readington, New Jersey, 2d.

At Mottville, Michigan, swans were observed flying southward on the 19th, 24th, 26th.

#### POLAR BANDS.

Lead Hill, Arkansas, 24th, 28th.  
 Archer, Florida, 10th, 11th, 17th, 23d, 26th, 29th.  
 Riley, Illinois, 3d, 29th.  
 Guttenberg, Iowa, 24th.  
 Eastport, Maine, 23d.  
 Salina, Kansas, 23d.  
 Yates Centre, Kansas, 29th.  
 Moorestown, New Jersey, 28th.  
 Nashville, Tennessee, 20th, 24th, 25th, 26th, 28th.  
 Rio Grande City, Texas, 2d, 28th.  
 Wytheville, Virginia, 1st, 9th, 26th.  
 Dale Enterprise, Virginia, 26th.  
 Prairie du Chien, Wisconsin, 10th.

#### EARTHQUAKES.

Rivas, Nicaragua, Central America, October 2d.—Two light shocks of earthquake occurred on this date, the first at 2.32 p. m., of two seconds duration, and the other after 3 p. m., of about three seconds duration.

San Juan del Sur, Nicaragua, Central America, October 3d.—A strong shock of earthquake was felt at 4 p. m. on the 2d.

Los Angeles, California.—A slight shock of earthquake was felt at 3.34 p. m. on the 22d.

The following note is from the "Danbury (Connecticut) News," (date of issue not known). The earthquake referred to was that which occurred August 10, 1884:

At Rocky Glen where all attempts to obtain water by digging wells had always failed, there has been an abundance of water since the occurrence of the earthquake. Previous to that all water used in the houses and green-houses was brought from a long distance, necessitating much labor and ex-